Section 7 - VISITING EXPERIMENT GUIDELINES

The capabilities described in the previous sections may be used in experiments designed for specific Visiting Experimenter (VE) requirements. VE process must be followed, regardless of whether plans are to become a user of the features described heretofore or simply by requesting the observatory functions to collect measurement data. The VE process is the subject of this section. Please note that the terms *Visiting Experiment* and *VE Program* may be used interchangeably in this manual.

Authorization

Any United States Government agency or contractor representative can be authorized to use AMOS facilities. Non-government organizations can also be granted access. Criteria for access are:

- Suitability of the VE's research or measurement objectives in light of the AMOS and Air Force Research Laboratory mission;
- Priority of the requested support in view of other tasking and scheduled activities; and
- Scientific or technical merit of the proposed research.

Program Classification

AMOS VE Programs (VEs) are divided into two main classes: Measurement Programs and Development Programs. Measurement Programs have little or no direct on-site involvement by the VE and are usually characterized by scientific measurements. Development Programs are scientific investigations that may require modifications or additions to AMOS facilities and direct personnel involvement on the island.

Measurement Programs

Measurement Programs are typically characterized by little or no direct on-site involvement by the VE. They are generally characterized by metric measurements and surveillance of mid-course missiles/payloads and satellites. In practice, standard AMOS resources are used to make measurements or obtain data specified by a VE. All preparations and measurements are conducted on site by the AMOS staff; data processing and analysis may be performed as specified by the VE. End-of-test data packages or project reports are then prepared and provided to VEs in the formats required to fulfill program objectives.

Development Programs

Development Programs are typically characterized by scientific investigations of new technologies or techniques that result in modifications to AMOS facilities, mounts, and sensors. VE's sensors or systems are usually introduced temporarily at AMOS, but modifications are sometimes permanent and significant, resulting in major VE-supported facility and capability upgrades.

An important distinguishing feature of Visiting Experiments is the on site involvement of VE personnel. Their participation may range from casual on-site observers or operators of their own supplied equipment, to extended, in-depth involvement alongside AMOS personnel in all aspects

of technical preparation and conduct of their research. While differentiation is not required of the VE process, it is sometimes useful to break developmental programs into four different modes:

- *Sensor Support* - MSSS facilities are needed to support a VE's sensor. Support may consist of performance verification, aid to pointing, acquisition, and tracking; or laser illumination.

  Example: Mount a prototype star tracker with self-contained optics on the AMOS 1.6 Meter telescope, providing very precise pointing and special tracking patterns.

- *Special Instrumentation* - The VE requires the acquisition or development of a special instrument or system to meet data requirements.

  Example: Provide a highly sensitive, remotely operable video system for long term dark sky observations of atmospheric phenomena.

- *Special Operations* - The VE needs one or more telescope or beam director mounts in a unique, non-standard configuration.

  Example: Incorporation of an auto-tracker and associated software into the mount control system (MCS) for non-ballistic tracking of accelerating boost-phase objects launched from the island of Kauai (KTF).

- *Site Support* - The VE requires only local coordination for use of site infrastructure (power, water, shelter, land).

  Example: The facilities of an adjacent DoE building site were made available for the support of a self-contained infrared and visible sensor on a simulated airborne platform which needed testing in the unique Haleakala environment of high altitude, outstanding seeing, with clear lines-of-sight to areas of high thermal clutter.

Site Upgrades

VE Programs that contribute significantly to observatory upgrades or instrumentation are supported at preferential rates. This is further discussed below. Qualifying upgrades fall into several categories:

- Direct funded improvements to observatory facilities to meet program-specific capability requirements.
- Direct purchases of program-specific equipment or instrumentation which is subsequently transferred to AMOS custody for long term use on site.
- Equipment or instrumentation brought to AMOS by a VE and then left behind on site under AFRL/DEBI custody for long term discretionary use.

In the case of the visiting experiment that requires the VE to retain possession of his equipment, the installation at AMOS is considered temporary although special fixtures and adapters may be developed as required for the installation. The equipment will be returned to the VE's organization after completion of the experiment. See the *Boeing - Maui Shipping Document* for property tagging and shipping procedures to be followed.

Visiting Experiment Process

Initial Contact

Contacting AMOS

The following steps are required before a prospective VE can conduct an experiment or obtain data collection services at AMOS:

- Initial Contact
- Interface Meeting/Site Visit
- Preparation of a Preliminary Cost Estimate

- Preparation of a Program Proposal

Steps 3 and 4 are performed by AMOS personnel and iterated with the intending VE until agreement is reached. These steps are detailed in the following paragraphs.

Addresses

A prospective VE should contact the AMOS VE Programs Coordinator, or alternately, the AMOS Chief Scientist, by telephone at (808) 874-1541, facsimile at (808) 874-1640, or by mail at: the Air Force Research Laboratory (AFRL/DEBI); 535 Lipoa Parkway; Kihei, Maui, HI 96753.

Initial Survey

Information sought in initial VE contacts includes:

- Outline of program objectives
- Details of required measurements
- Approximate time frame of desired support
- Points of contact (address, telephone, etc.) for programmatic and technical coordination.

Information developed during this initial exchange will provide the basis for the assignment of a Responsible Engineer (RE) who will accomplish implementation of the program.

The AMOS *Pre-Experiment Survey* can serve as a useful outline of general requirements to guide these preliminary discussions, and should be completed and forwarded as soon as practicable to support AMOS planning and preparations for a follow-on site meeting, if indicated.

Interface Meeting/Site Visit

A meeting between VE representatives and AFRL/DEBI and the support contractor's scientific, operational, engineering, and safety personnel is then conducted. Although a face-to-face meeting is desirable, especially because it affords the opportunity to visit the observatory and inspect the facilities and instrumentation selected for experiment support, meeting objectives can be satisfied by telephone, particularly if the VE is already familiar with the site.

When to Visit

Although timing of this meeting hinges on the technical complexity of preparations for the desired support, it may be governed by fixed launch schedules. No less than three months lead time prior to the commencement of operations is sought, with six months preparation time being the desired minimum. The VE presents a description of his technical requirements and measurement objectives at this meeting in sufficient detail to support preliminary planning and scheduling estimates.

Information Sought

There is a wide variation in the level of facility and personnel support required for VE programs. Since one experiment may require only a platform or site for the emplacement of instrumentation, while another may require engineering design, complex fixtures, new instrumentation, facility modifications, detailed test planning, special software development, and operations support, AMOS personnel will seek the following information:

- What site facilities and instrumentation will be used?
- What accommodations/alterations must be made to the facility, mounts, or instrumentation to incorporate VE's equipment?

- What are the integration points between the Visiting Experiment's instrumentation and the site instrumentation?
- What special software interfacing might be needed?
- What level of operations support is needed to perform the experiment(s)?
- What is the visitor's schedule requirement?
- What is the level of security required?

Information assembled during this meeting, will provide the basis for the preparation of a preliminary Statement of Work (SOW) from which initial cost estimates are generated.

Safety Briefing

There are three phases to safe accomplishment of a visit to the observatory. The first is the drive ascending nearly 10,000 ft. to the observatory. Take some warm clothing. The second phase concerns the time you are at the site, and the third is the return to near sea level. The third phase often starts from a considerably colder environment than the start of the first phase.

Driving

Choose an automobile that has been properly maintained and that is not restricted (by the automobile rental agency) from ascending the volcano road. Reputable rental car facilities on Maui can supply good automobiles for the drive to the summit. There is no food available at the summit.

Before starting, make sure the tires and brakes are in good condition and the windows are clean. Wear sunglasses when the time for ascending the mountain requires driving into the sun. Be on the lookout for cattle and downhill bicyclists on the road. Night driving requires special diligence and patience because the road is narrow and unlit. For most cars, a half tank of gasoline will be more than adequate to go from Kihei to the observatory and return. Since fuel is not available on the highway to the observatory above the junction of Highways 377 and 40, about 28 miles from the summit, fuel the vehicle accordingly.

Above the 3,000-foot elevation, much of the road to the observatory is steeply graded, with many hairpin turns and long sections of road with narrow or no shoulders. During the drive, you may encounter weather that varies from warm and clear at sea level to fog and ice at the summit. If you need the heater in the automobile, do not turn off the air conditioner; it acts as a dehumidifier, to prevent condensation on the windows. You must use lower gears to aid braking during descent.

At The Observatory

Enter the observatory parking area at a speed of 5 mph or less. At night, switch to parking lights at the advisory sign at the head of the driveway into the parking area. Park in a marked stall, and lock your vehicle. Note the automobile's location, it may be very dark when you leave. You may appreciate wearing a sweater or jacket. The telescope domes are kept at the outside ambient air temperature. Enter the facility through the reception area in the northwest corner of the parking lot.

All visitors must sign the visitor control log located in the observatory entrance reception area. An on-site Security Representative will issue a visitor's badge. Visitors must have prior written approval from the Air Force Space Command (via the Det 3, 18 SPSS site commander) to visit the site. If a security clearance is necessary for your visit, a certified visit request must be on file at the Boeing - Maui Security Office. Once inside the facility, obey all posted safety information, and do not handle or operate equipment unless authorized to do so. Visitors must sign out and return their badge when leaving.

The Altitude

You may notice physical effects at the summit, as your body compensates for the diminished oxygen content of the air. Your respiration rate may automatically increase, so it is advisable to slow down a bit to prevent shortness of breath. If you do get lightheaded or short of breath, compressed breathing oxygen is readily available. Do not hesitate to ask anyone on site to assist you in locating and using one of the tank and mask units.

Be aware that it can be both very cold and very dry at the observatory. Bring a sweater or windbreaker, and if you plan to be on site for more than a couple of hours, drink extra fluids during your stay to prevent dehydration. Fatigue and lessening of thinking skills occur more quickly at higher elevations, and you should plan your work day to compensate. Allow more time for sleep and avoid the intense sun to prevent severe sunburn.

Proposal / Task Order

Preliminary Cost Estimate

A preliminary cost estimate is a Rough Order of Magnitude (ROM) cost estimate, generated from the preliminary SOW for informal discussion with the prospective VE. Note that ROM estimates are non-binding planning estimates and are usually generated within a few days of the interface meeting, but may require a week or more to prepare for extended or technically complex programs. Essential considerations in developing these cost estimates include:

- Analysis of experiment objectives in light of existing capabilities and required instrumentation upgrades.
- Special calibration or collimation procedures required for various mount/sensor combinations.
- Special software modifications.
- Projected mount/sensor use.
- Availability of qualified personnel to meet the proposed preparation and test schedule.
- The degree of coordination and scheduling to minimize impact of required modifications to observatory facilities and instrumentation.
- Extent of Visiting Experimenter participation and coordination requirements.
- Assessment of value and projected utility of permanent VE supported upgrades to observatory facilities and instrumentation.

Upon VE acceptance of the preliminary ROM estimate, adjusted to best fit the program by mutual agreement, formal programmatic procedures are instituted for preparation of the program proposal.

Program Proposal

From one to four weeks are required to prepare a program proposal, depending on scope and complexity of the required support. An additional two weeks is usually required for internal review and approval prior to formal letter submission by AFRL/DEBI to the VE. The VE can expect to receive the formal proposal in one to two months following the site visit.

The proposal is a binding agreement between the Air Force Research Laboratory and the VE for a defined set of technical deliverables for a specified cost. It serves as the principal vehicle supporting the transfer of funds from the VE to the Air Force Research Laboratory. It contains (1) a detailed description of the support to be provided by AMOS, as stated in the SOW and in its negotiated revisions, provides (2) schedules for the accomplishment of program milestones, and provides (3) a decomposition of cost by task. Content of the proposal may include:

- Acceptance Time Limitation

- Coordination
- Deliverables
- Environmental Impact
- Facility Modifications
- Key Personnel
- Milestones
- Objectives
- Program Description
- Safety
- Schedule
- Security
- Tasks

A complete listing of all required sensors, data products, magnetic media, and reports will ensure that all cost elements are anticipated, accurate, and complete. The *Experimenter's Data Request Form* can provide a useful guide for identifying and tabulating these requirements.

Costs are derived from a "bottom up" matrix of manpower (by grade and total hours) and material required to achieve each task element. They are generally non-negotiable except by reducing or redefining technical objectives or requirements. VE programs meeting Development Program criteria may be supported under an appropriate reduced rate schedule. Details should be discussed directly with the Air Force Research Laboratory VE Program Coordinator, (808) 874-1541.

Proposal cost estimates are based on a one-time assessment of resources based on availability and material costs that are constantly changing; consequently, estimates are issued with an acceptance time limitation, usually 60 days from time of receipt unless otherwise negotiated. Proposal costs may increase if not accepted within the specified time limit.

Preparation

Cancellation

In rare instances, entire programs or (more likely) scheduled test events or operations that are only part of the program, are canceled. Program cancellations have occurred, for example, as a result of redefinition of priorities or test objectives after planning or actual measurement support has commenced. Test event cancellations may result from adverse weather, operational contingencies, or equipment malfunction.

The disposition of program support funds already received for canceled program or test event support is addressed on a case basis, in consideration of all relevant factors, including:

For Programs:

- Size
- Duration
- Timing of cancellation (i.e., early or late in schedule)
- Funds remaining

For Test Events:

- Cause (i.e., equipment failure, weather, etc.)
- Advance notice given

Advance Notice of Event Cancellation

Note that "Advance Notice" is an important factor in determining support costs in the event of Measurement or Test Event cancellations, based primarily on drive time to the site and preparatory time required. As a general rule, notification of cancellation three or more hours prior to scheduled observatory manning will result in no charges to a program; cancellations after that time will be charged for 1/2 shift (4 hours) of affected personnel, up to full cost of the scheduled test or event, depending on when the cancellation notice is received.

Disposition of Program Funds

The foregoing discussion is presented in response to numerous VE queries concerning disposition of program funds in the event of cancellations or other contingencies affecting program charges. General planning guidance is given based on a few of the most common occurrences, but in view of the diversity of the situations and factors that must be considered, all queries relating to cancellation charges should be directed to the Air Force Research Laboratory AMOS VE Program coordinator at (808) 874-1541.

Special Requirements

Coordination at least one year prior to anticipated operations is necessary if program support requires modification of the facility or revisions to the lease between the U.S. Air Force and the landholder, the University of Hawaii, or both. Similar prior coordination is required for experiments that may involve environmental impacts or health considerations. In these cases, AMOS will coordinate and prepare Conservation District Usage Application (CDUA), Environmental Assessment (EA), or other required National Environmental Protection Agency (NEPA) compliance documentation. AMOS will also obtain appropriate Occupational Safety and Health Agency (OSHA), Hawaii State Department of Land and Natural Resources (DLNR), and Department of Health (DoH) clearances and permits.

Intended introduction and use of Government Furnished Equipment (GFE) must be declared early in the planning process to provide the Air Force Research Laboratory adequate time to ensure contractual compliance. All VE equipment to be brought to the site should be properly identified and tagged and inventoried. Submission with sufficient lead time of program requirements documentation containing special security or environmental requirements will ensure proper adherence to security procedures and compliance with all applicable environmental standards and procedures.

VEs should consult Appendix C, the "Boeing - Maui Hazard Communication Program" if their experiment requires special chemical agents. For laser operations, VE personnel are required to have an ophthalmic examination including fundus photography, on record, and are required to have the safety training specified in ANSI (American National Standards Institute) Standard 136.1 and AFOSH (Air Force Occupational Safety and Health) 161-10 pertaining to the safe use of lasers. The MSSS Safety Officer can supply further guidance on laser-specific requirements and arrange for required examinations and training.

VEs may consult Appendix E, "Visiting Experimenters and Equipment on Maui" for guidance on shipping their equipment to and from Maui. Security matters concerning magnetic storage media are also addressed in this appendix. If it is for use on the summit, VEs are advised to make sure their equipment operates properly at 10,000 ft. pressure altitude.

Mission Planning

Effective mission planning is a central feature of an active and professionally operated field site. This is particularly important when several VE Programs require concurrent support which must also be coordinated with other observatory research and development activities. This is accomplished through anticipating, planning, and scheduling of potentially competing test

requirements in a manner that satisfies all VE requirements while assuring efficient utilization of all observatory resources.

Elements of mission planning at AMOS include:

- Analysis of mission-specific experiment, test, or measurement objectives for compatibility with site capabilities
- Development of tailored calibration and collimation procedures for various mount/sensor combinations
- Coordination and scheduling of site activities to minimize facility down time, including unnecessary instrument changes,
- Coordination of multiple mounts/telescopes/sensors at one or more observational sites for single or multiple simultaneous activities
- Pre- and post- visit coordination with each VE, furnishing the investigator with appropriate manuals, interface and configuration documents, operational procedures, and post-experiment evaluations to assess results and guide future planning
- Special considerations (active vs. passive, etc.)
- Setting of program scope and objectives to maximize value to the AFRL/DEBI mission and cognizant scientific communities
- Creation of a document detailing the mission scenario. This document is called the Mission Instruction and Operations Plan, as described in paragraph 7.6.1.

Special Considerations

An example of a special consideration in planning for field experiments at AMOS is the active experiment. While those that receive data only are considered passive, those that use lasers to illuminate or stimulate a target in space are termed "active". The passive experiments typically use one or more of the receiver telescopes on site (i.e., twin 1.2 Meter, 1.6 Meter, BD/T). The Active experiments usually use one or more of the beam directors (LBD, BD/T), sometimes use self-contained optics provided by the Visiting Experimenter, and may use the other telescopes as receivers as well. Active experiments are generally more support intensive because there is usually more instrumentation and integration required, and there is typically more testing done prior to active operations.

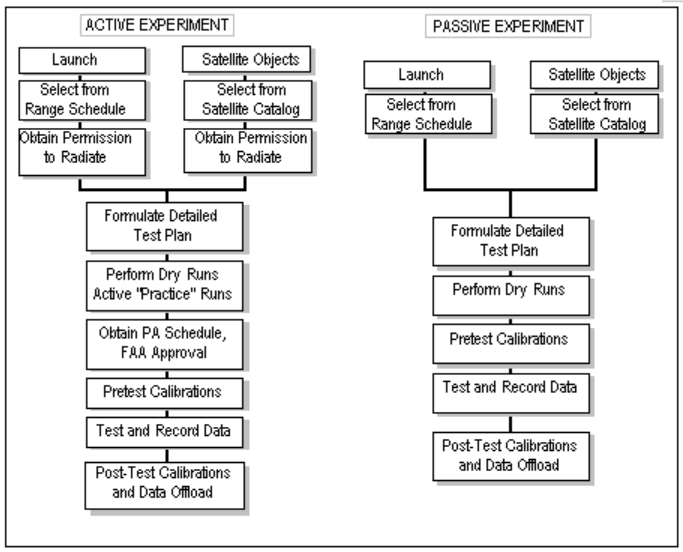

Figure 7-4. Execution Flow Charts

Whenever an active test is performed, laser beam radiation safety must be considered. Predictive Avoidance (PA) procedures must be followed to protect other satellites. FAA air traffic control procedures and radar support must be brought on line via established Controlled Firing Area (CFA) protocols to prevent the accidental illumination of aircraft. Enhanced on-site safety supervision is also necessary to positively prevent laser radiation exposure incidents with site personnel, and through established AMOS Plane Watch procedures, to visually detect low flying aircraft that might not be observed on radar. Figure 7-3 shows the planning flow chart for active and passive test conditions.

Software Aids to Mission Planning

The software required to support the MSSS for operations and the Kihei Field Office for development and documentation, consists of a number of programs, that are executed daily to accomplish the Mission Preparation Task (MPT). The general function of the MPT software is to generate the information, data files and listings necessary to plan, schedule, and perform the operations of target acquisition, tracking and data collection. The section on the Mission Preparation Task provides additional information.

Phase A. Prior to Measurements or the Experimental Test

A document describing in detail the steps to be performed for the experiment is prepared. It is called the Mission Instruction and Operations Plan (MIOP) and contains:

- Final, approved, program objectives
- Primary and Secondary sensor assignments
- Required calibrations/accuracy standards
- Detailed description of operations scenario:
- Schedule/Event Time Sequence
- Lighting Conditions
- Trajectory(ies) and Impact(s)
- Radar Support
- Deployment/Ejection Phenomena
- Communications/Coordination
- Test/Measurement procedures
- Data requirements:
- Recorder Assignments
- Data record Media/Format Specifications Classification and Distribution of Data
- Reports Required
- Safety Procedures and Constraints.
- Special Security Requirements
- Coordination for use of MOTIF & GEODSS
- Hardware design, procurement, fabrication
- Software development
- Installation and testing of hardware and software
- Preliminary measurements

Operations

Program Execution

Following the planning stages of a VE's Measurement or Visiting Experiment Program, AMOS personnel will support the integration, performance verification, test and evaluation, and operations stages. This is illustrated schematically in Figure 7-4 and discussed in the following subsections.

Stage 1: Integration

The integration stage of an experiment is divided into several discrete steps. The first step is the preparation of a proper environment for the experiment. It includes such tasks as preparing a sensor platform on a receiver telescope, installing an optical bench in a designated laboratory space, or modifying structure by incorporating a screen room or increasing the electrical power capacity to a sensor location.

Before an experiment environment is prepared, careful consideration is given to the VE's instrumentation dimensions, power and cooling requirements, optical requirements, installation of additional cable or fiber optic lines, and special requirements, such as EMI screening, laminar flow clean benches, or supplies of special gasses. Laser operations are especially sensitive to the observatory environment; e.g.: whether the laser wavelength and power density is compatible with the optical elements on available beam directors.

The next step is the determination of equipment design and alterations required to support the experiment. The best method for integrating the equipment into the site's systems is determined. This may require electrical, mechanical, or software modifications. An optimum approach is selected based on a joint review of cost and time impacts by both VE and support personnel.

Unless other arrangements are made, assigned logistic support personnel handle the receiving and off-loading of VE equipment shipped to the Shipping and Receiving Office (in Kahului), and then by truck to the site. Do not ship directly to the observatory. Details of this process are furnished in Appendix E. Crates and containers are counted, inspected for damage, verified with the VE, and unpacked if requested. Site personnel then assist in equipment installation, which may involve mechanical mounting, electrical wiring, coolant hookup, and optics installation. Although the expertise is available to provide complete set up support for Visiting Experiments, the level of support actually provided is based on the VE's needs and other priorities of the planned test operations.

Once the visitor's equipment has been set up, it is integrated into the site facilities at the appropriate integration points. Typical examples include:

- incorporating a VE's laser safety shutter circuit in a laboratory door interlock system, or
- the linking of a closed loop tracking device to the AMOS tracking mount control system.

Stage 2: Performance Verification

Although the proposed test design is thoroughly evaluated during preparations for experiment integration, a final performance verification occurs after the instrumentation is in place to identify any problems that may have been overlooked.

The defining event of this stage is a final end-to-end review of the Experimenter's design for instrumentation and set up. Any remaining mechanical, optical, electronic, or software design problems are identified, and corrective action implemented. Necessary changes can usually be made at this time in a cost effective and timely manner.

Stage 3: Test/Evaluation

This stage occurs after the basic set up is complete. Site support personnel will assist the Visiting Experimenter in verifying proper operation and integration of VE-supplied test equipment with observatory equipment and facilities. They will work closely with the Visiting Experimenters to quickly resolve any emergent problems. Examples of this support would be shielding of an electronic component or rerouting an electric cable to reduce EMI, or modification of control software to accommodate an unanticipated requirement.

After the VE's equipment set up is fully checked out and integrated with site instrumentation and facilities, the operations and technical support crews become an integral part of the experiment. A test schedule is determined, and the operations crew is assigned to appropriate duty stations such as mount control, camera control, laser operation, sensor control, recording, and any other duties necessary to attain experiment objectives.

Stage 4: The Experiment

Most experiments, even those intending to use active devices (lasers), begin with passive tests. A typical initial test is to observe stars and sun-illuminated satellites with the Visiting Experimenter's instrumentation. Data are collected and recorded, the integrity of the data path is evaluated, and calibration data are obtained. If the experiment setup is complex, testing might begin on only basic performance parameters, with full system check out performed by the Visiting Experimenters.

The next step is to perform one or more dry runs, as necessary to ensure that all operations and technical support personnel are thoroughly familiar with their assigned duties prior to, during, and following the test. Dry runs are tailored to realistically simulate test pointing vectors, dynamics, and time lines, to ensure that test equipment performance is properly validated in actual test scenarios. Please refer to Appendix E regarding calibration requirements for VE test equipment.

When all the preliminary activities are successfully completed, the actual experiment is conducted. Careful attention to rehearsals pays dividends in successful missions. The experienced operations crews perform support actions to assure the success of the mission.

Support Actions

AMOS support for program execution is provided via a number of specific support actions identified with each program phase. These phases are: A. Prior to measurements (i.e., test or experiment). B. During active measurements or test operations. C. Following measurements. The assigned Responsible Engineer (RE) will provide site interface and engineering/scientific support throughout all execution phases.

Phase B. During Active Measurements or Test Operations

Preparations for tests of experiments:

- Prepare Primary & Backup Key Person & Crew Assignment Lists:
    - Test Director & Test Conductor
    - Telescope, Dome, & Sensor Operators
    - Technicians-- Mechanical, Electronic, Video, Electrical Atmospheric Technician & Engineer
    - Computer Operator & Technician
    - Photographer & Video Operator
    - Communications Operator
    - Safety/Environmental Technician & Engineer
- Conduct Detailed Overview Briefings for Crew
- Conduct Rehearsals
- Nominal Scenario;
    - Standard Recovery Procedures (Computer Dropout, etc.)
    - Simulate Non-nominal Performance (i.e., Deployments)
- Coordinate/Schedule External Support:
    - Radar
    - Aircraft

        - Ground Sites
        - Surface Craft
        - FAA (re: CFA activation for laser operations)
    - Active support of tests/experiments:
        - Schedule Crew/Support Personnel
        - Conduct Event Briefings/Debriefings
        - Plan/conduct Dry Runs of Test Event
        - Perform Pre- and Post-Test Event Calibrations
        - Coordinate and Direct Test Support Activity
        - Assemble and Dispatch Data Packages

Reporting

Phase C. Following Measurements

- Site Deactivation,
- Disposition (i.e., pack, ship, store, etc.) of Visiting Experimenter's Equipment,
- Data Reduction and Analysis, and
- Prepare Technical/Program Completion Reports.

To be filed…

Shipping and Receiving

This is the address of the Shipping and Receiving Office for unclassified shipments only (refer to Appendix D for classified shipping instructions). The containers should be marked to the attention of the project name (or sponsor). The equipment will be held at the Shipping and Receiving Office for the User. Unless precluded by schedule constraints, the User is expected to unpack and check his shipment against the inventory list. The packing material may be stored at this location. There is no test equipment for checking performance at the Shipping and Receiving Office.

Transportation to the MSSS

The User may then arrange for Rockwell transportation, when available, to deliver his equipment to the Observatory and/or Kihei. TEMPEST approval, when required, will be accomplished at the site. When the experiment is completed, the User's equipment will be inventoried by the User and his sponsor, and transported back to the Shipping and Receiving Office for repackaging and shipment back to the User's own facility. DO NOT SHIP DIRECTLY TO THE OBSERVATORY.

Preparation for Shipment

MAKE SURE EQUIPMENT IS CLEAN AND FREE OF SEEDS, INSECTS, INSECT EGGS AND LARVAE. The State of Hawaii and the National Park Service have urged extraordinary safeguards to prevent the introduction of new species of any kind. The summit of Haleakala is home to a number of rare and endangered species that are under continuous threat from the introduction of exotic flora and fauna.

If SPECIAL CHEMICALS are required, please review the safety section in Section 5 concerning hazardous chemical policy. Provide a list of chemicals to be introduced to the site prior to arrival.

Liquid nitrogen and other cryogen’s are not normally available except by sufficient prior arrangement.

VISITING EXPERIMENTERS AND EQUIPMENT ON MAUI

Government Owned Equipment

A broad range of government owned equipment is available to support visiting experimenters. To best serve the visitor's needs, a list of requirements should be presented at least two weeks prior to the anticipated arrival at Maui Space Surveillance Site (MSSS). If the visiting experimenter is a contractor, the contract should indicate approval to use government owned equipment. Since danger to personnel and/or the environment could result from improper usage of machine shop equipment or a forklift truck, proof of competency may be established beforehand by a letter to the visitor's sponsor on Maui describing relevant experience.

Initial Inventory

All equipment, government owned or otherwise, designated for introduction into MSSS for experiment support must first be inventoried and tagged. A copy of the inventory list will be provided to the User's host or sponsor for verification prior to the commencement of set-up preparations. Another inventory will be performed jointly by the sponsor and the User prior to departure.

Calibration of Test Equipment

All User's test, measurement, and diagnostic equipment (TMDE) brought to the site must have appropriate property identification tags and a current calibration sticker indicating traceability to the National Bureau of Standards (NBS) such as, a sticker from any Air Force Precision Measurement Equipment Laboratory (PMEL). With prior coordination, calibrated TMDE for visiting experiment support may be available.

Moving MSSS Equipment

All MSSS property and equipment that is to be moved from one location to another (from room to room, as well as from building to building) for more than one day, requires a "Move Ticket" for documenting the move. Hand tools, multi-meters, and similar equipment do not require move tickets. Visiting experimenters are advised to bring their own suitably identified hand tools for use during their stay on Maui.

User's Electronic Equipment

User's electronic data handling equipment, computers and peripherals, must be listed by name and function along with the approximate dates of arrival and departure. This list is to inform, (a) the resident TEMPEST officer, (b) the resident Computer Systems Security Officer (CSSO), (c) the Facility Security Officer (FSO), and (d) the Site Commander (refer to Appendix F for suggested format). If the data to be processed, generated or stored is CLASSIFIED, the data handling equipment must meet the resident TEMPEST officer and Site Commander approval. If systems are intended to be interfaced to existing MSSS computers additional AFSPACECOM approval may be required. CLASSIFIED data will be handled in accordance with the instructions of the CSSO and coordinated through the FSO.

Upon completion of the visitor's experiment, all CLASSIFIED data/material will be processed through the Document Control Center/Communications Center at the MSSS to the Kihei Security Office for return mailing as authorized.

Laser Equipment

Visitors planning laser based experiments are urged to observe the cautions and recommendations to be found in Section 4.5.4 for the design and preparation of their laser equipment prior to shipment to Maui. If laser operation by visiting experimenter personnel is contemplated, an ophthalmic examination with documented fundus photography is required.